

## AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

### Listing of Claims:

1           1. (Currently amended) A system for enabling components to transfer  
2 data between each other, the system comprising:  
3           a processor;  
4           a memory;  
5           a plurality of components including a first component having a data  
6 object;  
7           a universal data transfer interface comprising object-oriented mobile code,  
8 which can be transmitted to and executed on the plurality of component to  
9 facilitate file access and printing without ~~which does not have~~ knowledge of the  
10 components' file system protocols or printer domain protocols, prior to initiating  
11 a data transfer;  
12           wherein the data object controls the universal data transfer interface;  
13           ~~wherein the file system protocols indicate how to access files over a~~  
14 ~~network; and~~  
15           ~~wherein the printer domain protocols indicate how to print and manage~~  
16 ~~print jobs over a network;~~  
17           a second component capable of receiving the data object and invoking the  
18 universal data transfer interface to cause a data transfer session object (DTSO) to  
19 be sent to the second component, wherein the second component acts as an  
20 intermediary component, which facilitates transferring of the DTSO from the first  
21 component to a third component;

22           wherein the DTSO includes source-specific object-oriented mobile code  
23   that can be interpreted and performed by the first component or the third  
24   component;  
25           wherein the DTSO is capable of being invoked by the third component to  
26   transfer data between the first component and the third component;  
27           wherein the DTSO includes instructions to return data types supported by  
28   the first component;  
29           wherein the DTSO includes instructions that enable the first component to  
30   receive asynchronous event notifications;  
31           wherein the DTSO includes instructions to return device type and  
32   operating status of the first component; and  
33           wherein the DTSO includes instructions to enable the first component or  
34   the third component to negotiate with each other to select a transfer medium to  
35   use to transfer data based upon the type of data.

1           2. (Cancelled)

1           3. (Previously presented) The system as set forth in claim 1 wherein the  
2   third component sends a second DTSO to the first component to be used by the  
3   first component for receiving data transmitted from the third component.

1           4. (Previously presented) The system as set forth in claim 1 wherein the  
2   third component receives the DTSO from the first component to be used by the  
3   third component for receiving data transmitted from the first component.

1           5. (Cancelled)

1           6. (Previously presented) The system as set forth in claim 1 wherein the

2 DTSO comprises instructions to enable the first component or the third  
3 component to negotiate with each other to transfer data, to select a  
4 communications protocol configured to transfer data between each other based  
5 upon a type of data to be transferred.

1 7. (Previously presented) The system as set forth in claim 1 wherein the  
2 DTSO is configured to indicate completion responsive to expiration of a data  
3 transfer lease by the first component or by the third component, or responsive to  
4 the first component or to the third component indicating that the data transfer has  
5 completed or failed.

1 8. (Currently amended) A system for enabling components to transfer data  
2 between each other, the system comprising:  
3 a processor;  
4 a memory;  
5 a first component having a first data object;  
6 a second component having a second data object;  
7 a first universal data transfer interface comprising object-oriented mobile  
8 code, which can be transmitted to and executed on the plurality of component to  
9 facilitate file access and printing without which does not have knowledge of the  
10 second component's file system protocols or printer domain protocols,  
11 wherein the first data object controls the first universal data transfer  
12 interface;  
13 ~~wherein the file system protocols indicate how to access files over a~~  
14 ~~network; and~~  
15 ~~wherein the printer domain protocols indicate how to print and manage~~  
16 ~~print jobs over a network;~~

17 a second universal data transfer interface which does not have a priori  
18 knowledge of the first component's domain specific file system domain or printer  
19 domain protocols, wherein the second data object controls the second universal  
20 data transfer interface; and

21 a third component capable of receiving the first data object and the second  
22 data object, and invoking the first universal data transfer interface and the second  
23 universal data transfer interface to use a data transfer session object (DTSO) to  
24 transfer data between the first component and the second component when the  
25 first component has data to transfer to the second component, wherein the third  
26 component acts as an intermediary component, which facilitates transferring of  
27 the DTSO from the first component to the second component;

28 wherein the DTSO includes source-specific object-oriented mobile code  
29 that can be interpreted and performed by the first component or the third  
30 component;

31 wherein the DTSO includes instructions to return data types supported by  
32 the first component;

33 wherein the DTSO includes instructions that enable the first component to  
34 receive asynchronous event notifications;

35 wherein the DTSO includes instructions to return device type and  
36 operating status of the first component; and

37 wherein the DTSO includes instructions to enable the first component to  
38 negotiate with the second component to select a transfer medium to use to transfer  
39 data based upon the type of data.

1 9. (Previously presented) The system as set forth in claim 8 wherein the  
2 third component sends the DTSO to the first component to be used by the first  
3 component for receiving data transmitted from the second component.

1           10. (Previously presented) The system as set forth in claim 8 wherein the  
2           third component sends the DTSO to the second component to be used by the  
3           second component for receiving data transmitted from the first component.

1           11. (Previously presented) The system as set forth in claim 8 wherein the  
2           DTSO is configured to indicate completion responsive to expiration of a data  
3           transfer lease by the first component or the second component, or responsive to  
4           the first component or the second component indicating that the data transfer has  
5           completed or failed.

1           12. (Currently amended) A method for enabling a plurality of  
2           components to transfer data between each other, the method comprising:  
3           invoking, with a second component having a data object that  
4           implements a universal data transfer interface, the universal data transfer  
5           interface of a first component of a plurality of components to cause a data  
6           transfer session object (DTSO) to be sent to the second component, wherein  
7           the second component acts as an intermediary component, which facilitates  
8           transferring of the DTSO from the first component to a third component; and  
9           invoking the DTSO with the third component to transfer data between the  
10          first component and the third component when the first component has data to  
11          transfer to the third component;  
12          wherein the universal data transfer interface comprising object-oriented  
13          mobile code, which can be transmitted to and executed on the plurality of  
14          component to facilitate file access and printing without does not have knowledge  
15          of the components' file system protocols or printer domain protocols, prior to  
16          initiating a data transfer;  
17          ~~wherein the file system protocols indicate how to access files over a~~  
18          ~~network; and~~

19       ~~wherein the printer domain protocols indicate how to print and manage~~  
20 ~~print jobs over a network;~~  
21       wherein the DTSO includes source-specific object-oriented mobile code  
22 that can be interpreted and performed by the first component or the third  
23 component;  
24       wherein the DTSO includes instructions to return data types supported by  
25 the first component;  
26       wherein the DTSO includes instructions that enable the first component to  
27 receive asynchronous event notifications;  
28       wherein the DTSO includes instructions to return device type and  
29 operating status of the first component;  
30       wherein the DTSO includes instructions to enable the first component or  
31 the third component to negotiate with each other to select a transfer medium to  
32 use to transfer data based upon the type of data; and  
33       wherein a session associated with data transfer is leased subject to  
34 periodic renewal by the first component at an interval of time specified by an  
35 initial lease duration parameter.

1           13. (Cancelled)

1           14. (Previously presented) The method as set forth in claim 12 further  
2 comprising sending a second DTSO to the first component to be used by the first  
3 component for receiving data transmitted from the third component.

1           15. (Previously presented) The method as set forth in claim 12 further  
2 comprising receiving the DTSO from the first component to be used by the third  
3 component for receiving data transmitted from the first component.

1           16. (Cancelled)

1           17. (Previously presented) The method as set forth in claim 12 wherein the  
2       DTSO comprises instructions to enable the first component or the third  
3       component to negotiate with each other to transfer data, to select a  
4       communications protocol configured to transfer data between each other based  
5       upon a type of data to be transferred.

1           18. (Previously presented) The method as set forth in claim 12 further  
2       comprising configuring the DTSO to indicate completion responsive to expiration  
3       of a data transfer lease by the first component or by the third component, or  
4       responsive to the first component or to the third component indicating that the  
5       data transfer has completed or failed.

1           19. (Currently amended) A method for enabling components to  
2       transfer data between each other, the method comprising:  
3           invoking a first universal data transfer interface of a first data object  
4       belonging to a first component and a second universal data transfer interface of a  
5       second data object belonging to a second component when the first component  
6       has data to transfer to the second component, wherein the second component acts  
7       as an intermediary component, which facilitates transferring of the DTSO from  
8       the first component to a third component;  
9           obtaining a data transfer session object (DTSO) from one of the invoked  
10      first universal data transfer interface or the second universal data transfer  
11      interface; and  
12      using the DTSO to transfer data between the first component and the  
13      second component;

14 wherein the universal data transfer interface comprising object-oriented  
15 mobile code, which can be transmitted to and executed on the plurality of  
16 component to facilitate file access and printing without does not have knowledge  
17 of the components' file system protocols or printer domain protocols, prior to  
18 initiating a data transfer;  
19 ~~wherein the file system protocols indicate how to access files over a~~  
20 ~~network; and~~  
21 ~~wherein the printer domain protocols indicate how to print and manage~~  
22 ~~print jobs over a network;~~  
23 wherein the DTSO includes source-specific object-oriented mobile code  
24 that can be interpreted and performed by the first component or the third  
25 component;  
26 wherein the DTSO includes instructions to return data types supported by  
27 the first component;  
28 wherein the DTSO includes instructions that enable the first component to  
29 receive asynchronous event notifications;  
30 wherein the DTSO includes instructions to return device type and  
31 operating status of the first component;  
32 wherein the DTSO includes instructions to enable the first component or  
33 the third component to negotiate with each other to select a transfer medium to  
34 use to transfer data based upon the type of data; and  
35 wherein a session associated with data transfer is leased subject to  
36 periodic renewal by the first component at an interval of time specified by an  
37 initial lease duration parameter.

1 20. (Previously presented) The method as set forth in claim 19 further  
2 comprising sending the DTSO to the first component to be used by the first  
3 component for receiving data transmitted from the second component.



1           21. (Previously presented) The method as set forth in claim 19 further  
2 comprising sending the DTSO to the second component to be used by the second  
3 component for receiving data transmitted from the first component.

1           22. (Previously presented) The method as set forth in claim 19 further  
2 comprising configuring the DTSO to indicate completion responsive to expiration  
3 of a data transfer lease by the first component or by the third component, or  
4 responsive to the first component or to the third component indicating that the  
5 data transfer has completed or failed.

1           23. (Currently amended) A computer readable medium having stored  
2 thereon instructions for enabling components to transfer data between each other,  
3 which when executed by one or more processors, causes the processors to  
4 perform:  
5           invoking, with a second component, a universal data transfer interface of a  
6 data object belonging to a first component of a plurality of components to cause a  
7 data transfer session object (DTSO) to be sent to the second component when the  
8 first component has data to transfer to a third component, wherein the second  
9 component acts as an intermediary component, which facilitates transferring of  
10 the DTSO from the first component to the third component; and  
11           invoking the DTSO with the at least one of the plurality of components to  
12 transfer data between the first component and the third component;  
13           wherein the universal data transfer interface comprising object-oriented  
14 mobile code, which can be transmitted to and executed on the plurality of  
15 component to facilitate file access and printing without does not have knowledge  
16 of the components' file system protocols or printer domain protocols, prior to  
17 initiating a data transfer;

18       ~~wherein the file system protocols indicate how to access files over a~~  
19 ~~network;~~  
20       ~~wherein the printer domain protocols indicate how to print and manage~~  
21 ~~print jobs over a network;~~  
22       wherein the DTSO includes source-specific object-oriented mobile code  
23 that can be interpreted and performed by the first component or the third  
24 component;  
25       wherein the DTSO includes instructions to return data types supported by  
26 the first component;  
27       wherein the DTSO includes instructions that enable the first component to  
28 receive asynchronous event notifications;  
29       wherein the DTSO includes instructions to return device type and  
30 operating status of the first component;  
31       wherein the DTSO includes instructions to enable the first component or  
32 the third component to negotiate with each other to select a transfer medium to  
33 use to transfer data based upon the type of data; and  
34       wherein a session associated with data transfer is leased subject to  
35 periodic renewal by the first component at an interval of time specified by an  
36 initial lease duration parameter.

1           24. (Cancelled)

1           25. (Previously presented) The medium as set forth in claim 23 further  
2 comprising sending a second DTSO to the first component to be used by the first  
3 component for receiving data transmitted from the third component.

1           26. (Previously presented) The medium as set forth in claim 23 further  
2 comprising receiving the DTSO from the first component to be used by the third

3 component for receiving data transmitted from the first component.

1 27. (Cancelled)

1 28. (Previously presented) The medium as set forth in claim 23 wherein  
2 the DTSO comprises instructions to enable the first component or the third  
3 component to negotiate with each other to transfer data, to select a  
4 communications protocol configured to transfer data between each other based  
5 upon a type of data to be transferred.

1 29. (Previously presented) The medium as set forth in claim 23 further  
2 comprising configuring the DTSO to indicate completion responsive to expiration  
3 of a data transfer lease by the first component or by the third component, or  
4 responsive to the first component or to the third component indicating that the  
5 data transfer has completed or failed.

1 30. (Currently amended) A computer readable medium having stored  
2 thereon instructions for enabling components to transfer data between each other,  
3 which when executed by one or more processors, causes the processors to  
4 perform:  
5 invoking a first universal data transfer interface of a first data object  
6 belonging to a first component and a second universal data transfer interface of a  
7 second data object belonging to a second component when the first component  
8 has data to transfer to the second component, wherein the second component acts  
9 as an intermediary component, which facilitates transferring of the DTSO from  
10 the first component to a third component;

11 obtaining a data transfer session object (DTSO) from one of the invoked  
12 first universal data transfer interface or the second universal data transfer  
13 interface; and  
14 using the DTSO to transfer data between the first component and the  
15 second component;  
16 wherein the universal data transfer interface comprising object-oriented  
17 mobile code, which can be transmitted to and executed on the plurality of  
18 component to facilitate file access and printing without does not have knowledge  
19 of the components' file system protocols or printer domain protocols, prior to  
20 initiating a data transfer;  
21 ~~wherein the file system protocols indicate how to access files over a~~  
22 ~~network; and~~  
23 ~~wherein the printer domain protocols indicate how to print and manage~~  
24 ~~print jobs over a network;~~  
25 wherein the DTSO includes source-specific object-oriented mobile code  
26 that can be interpreted and performed by the first component or the third  
27 component;  
28 wherein the DTSO includes instructions to return data types supported by  
29 the first component;  
30 wherein the DTSO includes instructions that enable the first component to  
31 receive asynchronous event notifications;  
32 wherein the DTSO includes instructions to return device type and  
33 operating status of the first component;  
34 wherein the DTSO includes instructions to enable the first component or  
35 the third component to negotiate with each other to select a transfer medium to  
36 use to transfer data based upon the type of data; and  
37 wherein a session associated with data transfer is leased subject to  
38 periodic renewal by the first component at an interval of time specified by an  
39 initial lease duration parameter.

1           31. (Previously presented) The medium as set forth in claim 30 further  
2 comprising sending the DTSO to the first component to be used by the first  
3 component for receiving data transmitted from the second component.

1           32. (Previously presented) The medium as set forth in claim 30 further  
2 comprising sending the DTSO to the second component to be used by the second  
3 component for receiving data transmitted from the first component.

1           33. (Previously presented) The medium as set forth in claim 30 further  
2 comprising configuring the DTSO to indicate completion responsive to expiration  
3 of a data transfer lease by the first component or by the third component, or  
4 responsive to the first component or to the third component indicating that the  
5 data transfer has completed or failed.